



INTEROFFICE CORRESPONDENCE

DATE: June 1, 1992
TO: Distribution
FROM: C. D. Reno, Ecology & National Environmental Policy Act Division, Bldg. 080, X8620 *CDR*
SUBJECT: CATEGORICAL EXCLUSION SITE CHARACTERIZATION FOR OPERABLE UNITS
3, 4, 7, and 9 (EC7191) *CD*

Attached is the DOE determination that your projects fit within one of the Categorical Exclusions promulgated in 10 CFR 1021 and amendments. This determination completes the NEPA process for your projects. If any scope changes arise that might change the projects so they no longer fit within the Categorical Exclusion, please contact me, as we may need to modify the documentation.

bmb

Attachment:
As Stated

Distribution

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cc:
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S. M. Nesta w/o Attach.
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Rocky Flats Office

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ROCKY FLATS PLANT
CORRESPONDENCE CONTROL

ERD:PMP:5187

Section D Categorical Exclusion (RFO/CX010-92) Determination

C. M. Borgstrom, Director Office of NEPA Oversight, EH-25

A copy of RFO/CX010-92, Site Characterization Activities, is attached for your review. A copy of the Floodplain/Wetland Assessment that has been prepared for this project is also attached for your information. Work will begin immediately on the activities that are not located within floodplains at the plant site.

[Signature]
Terry A. Vaeth
Manager

Attachments

cc w/Attachments:
R. Scott, EM-20
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L. Lawson, EM-431
S. Nesta, EG&G

SECTION D DETERMINATION
CATEGORICAL EXCLUSION (CX) DETERMINATION - RFO/CX010-92

Proposed Action: Site Characterization Activities

Location: OU 3, 4, 7 & 9, Rocky Flats Plant, Golden, Colorado

Proposed by: U.S. Department of Energy Rocky Flats Office (RFO)

Description of the proposed action:

The Department of Energy proposes to initiate site characterization work in Operable Unit (OU) 3 (Off site Areas), OU 4 (Solar Evaporation Ponds), OU 7 (Present Landfill) and OU 9 (Original Process Waste Lines) at the Rocky Flats Plant (RFP). The location of RFP is shown in Figure 1. Site characterization would involve the collection of surface water, groundwater, soil, sediment and air samples to identify the nature and extent of contamination that has been released to the environment. In addition, field surveys and sampling of terrestrial and aquatic biota would be conducted. The work would be undertaken pursuant to the provisions of the Comprehensive Environmental Response, Compensation and Liability Act and the Resource Conservation and Recovery Act and is an integral part of DOE's program to remediate contamination at RFP. Site characterization work in OUs 3, 4, 7 and 9 would start in 1992. Most of the work would be completed during 1992, but some would occur during subsequent years.

Operable Unit 3 - Off site Areas

OU 3 includes various lands off the RFP site immediately to the east of the Plant's buffer zone as shown in Figure 2. Figure 3 shows approximately where vertical soil profile trenches are planned. Vertical soil profile sampling involves using a backhoe to dig a trench that is up to 9 feet long, 5 feet wide and 4 feet deep. Eleven samples would be collected from various depths in each trench. A trench can usually be dug and backfilled in the same day. The soil removed from the trench would be used to backfill it. Six trenches could be located in floodplains.

Surficial soil samples would be collected within approximately 12 miles of RFP as shown in Figure 4. Twenty-five scrapes would be taken in the vicinity of each of the dots on the map. Samples would be taken on a grid pattern with a small, hand held device which collects 2 to 3 tablespoons of soil from the top one-quarter inch of the ground. Any of the soil scrapes has the potential to be taken from within a floodplain.

Sediment sampling locations are shown in Figure 5. Sediment sampling involves pedestrian visits to sampling stations to collect up to a few pounds of sediments. Both new and existing sampling stations would be used. A new sediment sampling station is established by driving a metal fence post into the ground to mark a site which can be returned to in the future. Some of the sediment sampling stations would be located on streams or ditches while others would be located on the shores or under the waters of ponds, lakes, or reservoirs. Vertical sediment profile samples would be taken from reservoir bottoms by dropping a tube through the water into the sediment. The bottom of the tube closes and up to 3 feet of sediment can be withdrawn

for analysis. Sediment grab samples would also be taken from reservoir bottoms, but include only the top 2 to 3 inches of sediment. By their nature, all sediment sampling stations and sample collection activities would be in floodplains.

Figure 6 shows the locations of surface water sampling sites. Surface water sampling involves gathering up to a few gallons of water in hand held containers. Both new and existing sampling stations would be used. A new surface water sampling station is established by driving a metal fence post into the ground to mark a site which can be returned to in the future. Some of the surface water sampling stations are, or would be, located on streams or ditches while others would be located on the shores or waters of ponds, lakes, or reservoirs. By their nature, all surface water sampling stations and sample collection activities would be in floodplains.

Locations of existing and planned ground water monitoring wells are shown in Figure 7, including an alluvial well and an Arapahoe Formation well to be drilled immediately downstream of both Great Western Reservoir and Standley Lake. These locations are in the floodplains of Walnut and Big Dry Creeks respectively. The four new wells would be drilled using a truck mounted drill rig to drill a six inch diameter hole approximately 15 to 60 feet deep. The wells would be completed and screened for sampling of the desired interval. Vegetation around each well site would be trampled during well drilling operations. When characterization activities are completed and water samples were no longer needed (approximately 3 years), the wells would be plugged and abandoned according to standard plant practices, unless custody of the wells is transferred to the cities of Westminster and Broomfield for continued use.

Also shown in Figure 7 are the locations of air and meteorological monitoring stations. Three types of air sampling and meteorological monitoring activities would occur at OU 3. One would be installation of three new high volume air samplers. Two of the samplers would be located at Standley Lake while the third would be at a site in a terrestrial area north of the Lake. An air sampler is a piece of equipment housed in a stainless steel box approximately 2 feet on a side. The air samplers would be installed by pouring a concrete pad on which the air sampler is mounted, and installing two power poles to bring an electric line to the site. The pads and samplers would be removed after the study is complete (about 3 years). One of the sampler locations may be within the floodplain of Standley Lake, but would be unlikely to be inundated by anything other than a 50 or 100 year storm event.

The second activity is installation of two new meteorological monitoring stations. The locations of these stations are also shown in Figure 7. The stations are 6 meter towers on small concrete pads. The towers may be fenced for protection if necessary. Each tower would hold instruments to measure meteorological characteristics and may be supported by guy wires. One of the stations would be co-located with one of the air samplers in the floodplain of Standley Lake. The second tower would be installed at a terrestrial site approximately a mile east of the eastern RFP boundary, south of Great Western Reservoir. Installation and operation of the meteorological towers is not expected to have any adverse impacts to floodplains because of the non-invasive character of the activity.

The third air sampling activity in the OU 3 is the use of small and medium sized portable wind tunnels to characterize and measure the ability of winds at various speeds to move sediments on the exposed areas of the Standley Lake bed. The wind tunnels are mounted on a small trailer and

have an open-floored test section which is placed over the surface of the lake bed. Air is drawn through the test section at controlled velocities. The air stream passes through a duct fitted with a filter which collects particulates raised from the lake bed by the wind. The particulate samples would be sent to a laboratory to identify their volume and constituents. Approximately six tests would be conducted at each of three sites in late summer when soil moisture is generally at its lowest level. Each of the tests would take about one day. One site would be on the bed of Standley Lake, the second on the bed of Great Western Reservoir, and the third on an unidentified upland site south of Great Western Reservoir. The first two sets of tests would take place within the floodplains of Standley Lake and Great Western Reservoir.

Figures 8a and 8b shows the locations of terrestrial and aquatic flora and fauna sampling. The samples would be gathered using standard collection techniques such as vegetative clipping, live animal trapping and field surveys to make population counts. These activities would continue for a year. All of the aquatic and some terrestrial sampling locations are in floodplains.

Operable Unit 4 - Solar Evaporation Ponds

OU 4 is located in the northeast portion of the developed area of RFP as shown in Figure 9. The Solar Ponds are located inside the high security area of RFP, known as the Protected Area (PA).

Two monitoring well clusters are proposed at locations hydrologically up gradient of the ponds as shown in Figure 10. Each cluster would consist of three new wells: one well screened in alluvial sediments, the second in weathered bedrock and the third in unweathered bedrock. The wells would be drilled using a truck mounted drill rig to drill a six inch diameter hole approximately 15 to 60 feet deep. Drill cores would be collected for analysis and to determine if whether the associated drill cuttings require treatment before disposal. Vegetation around each well site would be trampled during well drilling operations.

Figure 11 shows the locations of proposed radiological survey readings and surficial soil samples. The radiological survey would consist of a surveyor taking 1 minute readings with a gamma probe held at waist height at each of the approximately 350 stations shown in Figure 11. The surveyor would also take a reading of alpha radiation at the same stations. Alpha readings would be taken from eight locations on a 5 foot radius from each station with the alpha counter held 4 to 6 inches above the ground.

Figure 11 also shows the locations at which approximately 35 surficial soil samples would be taken. At each location, two 1-meter square areas would be staked out one meter apart. Samples would be collected to a depth of 1 inch with either a plug-type collector or a scoop. In addition to these 35 samples, surficial soil would be collected at the location of each of the four boreholes shown in Figure 12.

Site characterization at OU 4 would include a program to locate two earlier ponds and any residual piping associated with them in the mottled area shown in Figure 12. Also shown in Figure 12 are the locations of four new boreholes to be drilled in the area of the two original solar ponds. Cuttings from these boreholes would be collected and analyzed for their chemical constituents as part of the effort to characterize the original solar ponds. These boreholes would

be drilled to the depth of saturated soil or to bedrock. The holes would be 15 to 20 feet deep.

Figure 13 presents the locations of approximately 26 new soil boreholes that would be drilled in and around the sites of the five existing Solar Ponds. It is expected that most of these boreholes would be 15 to 20 feet deep. However, six of the 26 boreholes in the area of the existing ponds would be 40 to 60 feet deep to collect geologic information. The six locations of the deeper boreholes have not yet been identified.

The mottled area in Figure 13 shows the area around the existing ponds that would be surveyed with ground penetrating radar. A transmitter would be used to send out a signal which is reflected by the earth's layers and returned to a receiver on the ground surface. The return signal is recorded and translated to provide a picture of the subsurface.

North and hydrologically down gradient of the Solar Ponds is a system of French drains referred to as the Interceptor Trench System (ITS). The ITS was installed to collect ground water contaminated by liquids leaking from the ponds and is shown by the dashed lines in Figure 14. A total of 19 soil boreholes is planned in the area of the ITS at the locations shown in Figure 14. These boreholes would be drilled to provide soil contaminant information at various distances from the Ponds, and to compare contaminant levels up gradient and down gradient of the ITS. The boreholes would be 15 to 60 feet deep. Three nests of six piezometers would be placed in three of the deeper boreholes in the ITS area to provide data on ground water levels. The borehole locations used would be determined by the data provided by the boreholes. Boreholes would be abandoned according to standard operating procedures when they are no longer needed.

Flora and fauna would be sampled at proposed locations shown in Figure 15. These locations are tentative and subject to change as field conditions require. Sampling would include vegetative clipping and live trapping of animals for population counts and tissue analysis.

Not shown in any of the figures are locations of soil lysimeters for investigation of the vadose zone. Soil lysimeters are devices that can collect soil moisture and soil gas samples. They can be mounted on the end of metal rods and driven into the ground, or installed by drilling small diameter holes into which a lysimeter is placed. At the Solar Ponds, the rods or boreholes would be 1 to 3 inches in diameter and the lysimeters placed at depths of between 10 and 20 feet. Up to 100 lysimeters may be used in locations that would be determined from analytical information from other boreholes drilled in the areas of the Ponds and the ITS.

Operable Unit 9 - Original Process Waste Lines

Figure 16 shows the location of OU 9, the Original Process Waste Lines (OPWL). The OPWL constitute a system of tanks and underground pipes that were used to store and carry liquid wastes from various manufacturing processes to a treatment plant at RFP, or from the treatment plant to other facilities such as the Solar Ponds. Portions of the OPWL are included in the current process waste transfer system, but most of the system was replaced and abandoned prior to 1984 and is no longer in use. Some of the lines shown in Figure 16 are in or under production buildings. These sections would not be investigated at this time. Because the OPWL is a group of underground linear features much of which was constructed over 30 years ago, and

because documentation of the lines is incomplete, site characterization efforts at this time would consist chiefly of digging test pits and drilling boreholes to determine where leaks might have occurred. Figure 17 shows the proposed locations of the initial test pits (denoted by a small square).

The OPWL site characterization program would be divided into two parts: one would look at pipelines and the second would look at tanks. Pipeline locating devices may be used to define pipeline locations. Both investigations would use mechanical (backhoe) and hand held (shovel) equipment to dig pits to the depths necessary to provide for physical and visual access to the lines or tanks. The pipelines are believed to be between 3 and 8 feet deep. The first stage of the pipeline investigation is planned to include pits at the locations shown in Figure 17 which are the sites of pipeline endpoints or known structural features where leakage is most likely to have occurred. Additional test pits would be excavated at intervals not greater than 200 feet throughout the OPWL system. It is anticipated that data compilation would identify the general or even exact locations of historic leaks, and pits would be excavated at these locations. Test pits would be spaced no more than 100 feet apart where releases are believed to have occurred but the exact location is not evident from the record, or where visual inspection reveals instances of poor pipeline integrity or other indications of potential leakage. Some of the test pits may be within floodplains at the eastern ends of the pipelines.

An individual test pit would be excavated so that soil samples can be taken at the surface prior to excavation, in the original pipeline bedding material directly below the pipe, and in native soil under the backfill. Test pits would remain open one or two days. Based on expected conditions, the deepest test pit should be 11 to 12 feet deep.

Where practical, samples of residues in the pipe would be collected by gaining pipeline entry at existing openings or by cutting into the pipes. New openings would be closed with grout after taking the residue sample. Inside surface radiological dose rate measurements would be taken by inserting a low energy gamma probe radiation detector into openings in the pipeline. Pipeline sections located beneath the water table would not be opened.

The second stage of the pipeline investigation would be based on the analytical results of the first stage and would use soil samples. Soil boreholes would be drilled on 5 and 20 foot spacings between test pits at which contaminated soils were found along the entire length of the pipeline. The spacing pattern would depend on whether adjacent test pits also contain contaminated soil. Boreholes would be drilled to bedrock or the water table, whichever is shallower, with a continuous core produced to that depth. Samples would be taken from up to five different locations on the core.

The first stage of the tank investigation would sample the tanks shown in Figure 17 and identified on Table 1. Tanks that would be investigated have Xs in one or more columns under Field Investigation Summary on the Table. These are OPWL tanks that are no longer in use and are not located in or under production buildings. During the course of the investigation, additional tanks that are not currently known to be part of the OPWL system may be discovered and added to the study.

Tanks would be inspected visually; by sampling residues left in the tanks; and by drilling soil boreholes around the tanks. Visual inspections would be done remotely by lowering a camera into the tank where possible. Residue or wipe samples would be taken at tanks which have not been cleaned and painted since their use was discontinued. One soil borehole would be drilled on each side of each tank that is accessible to a drilling rig, usually four boreholes per tank. Boreholes would be drilled down through the fill material surrounding each tank to the native ground below the fill. Specific borehole locations at each tank would focus on known or suspected leak locations at that tank. Soil samples would be taken at the surface prior to drilling, midway between the surface and the water table or bedrock, and directly above the water table or bedrock.

The second stage of the tank investigation would provide more detailed information about leaky tanks identified in the first stage of investigation. Additional soil boreholes would be drilled on ten foot spacings out from the tanks to delineate the extent of contamination in soils. Because each situation is expected to be different, sampling patterns would be developed on a case by case basis.

The need for a third investigative stage for pipelines and/or tanks would be determined by the outcome of the first two stages. It is anticipated that additional boreholes would be drilled in and around pipeline and tank locations where contamination was identified in the preceding stages. Leaked material is expected to have concentrated in the sand and gravel used to backfill the pipeline and tank excavations because those materials accept liquids much more readily than the tighter native soil surrounding them. Stage three boreholes would, therefore, be concentrated in the previously excavated areas, but would also be located around contaminated sites to delimit the contamination. These boreholes, like the stage two boreholes, would be 15 to 20 feet deep, or to the water table, whichever is intercepted first. The number of boreholes at each site would depend on the horizontal extent of the contamination. Because of the tight nature of the native soils, it is expected that individual sites would not extend much more than 10 feet on either side of a pipeline or 20 feet away from the area of a tank. Such boreholes would probably be on 10 to 20 foot spacings, depending on the specifics of the situation.

As seen in Figure 18, two pipeline segments may extend east of the Protected Area (PA). One is believed to go only the short distance to the sewage treatment plant near South Walnut Creek. The other line, originally laid on the surface, may have extended as far as Pond B-2, 2,000-2,500 feet east of the PA fence. This line may have already been partially or totally removed. Test pits and soil samples may be taken on 200-foot centers along these lines to document the existence of the lines and sample for contamination along their alignments. The lower portions of either or both these lines may lie within a floodplain, and some of the test pits and soil sampling sites would also be in those floodplains.

The site characterization program at OU 9 would also include sampling and field surveys of flora and fauna in the OU. Because of its location in the developed portion of RFP, much of OU 9 is covered by pavement or buildings, so habitat is limited. Figure 18, however, identifies eight sites, mostly on the fringes of the OU and the developed area, where habitat exists and biota investigations are planned.

Operable Unit 7 - Original Landfill

Ou 7 is located about 1300 feet north-northwest of the parking lot on the north edge of the Plant's Protected Area on a ridge above Walnut Creek. Figure 19 shows the location of the OU 7 field work. At the locations marked with a V, samples of vegetation and soil would be collected. Vegetation would be collected by clipping within staked grids, and soil samples would be taken with a hand held device from the top 2 to 3 inches of the ground.

A marks the sites on Figure 19 where aquatic samples would be taken at streams and ponds. Aquatic samples would include surface water, flora, fauna and sediment. Samples of surface water and sediment would be up to a few quarts of water and a few pounds of sediment collected by hand. Flora and fauna would be collected to provide population counts and tissue samples for analysis.


Categorical exclusion to be applied:

3. Site characterization and environmental monitoring, including siting, construction, or operation of characterization and monitoring devices, under CERCLA and RCRA, if these activities would not introduce or cause the inadvertent or uncontrolled movement of hazardous substances as defined in section 101(33) of CERCLA, or non-native organisms, and would not adversely affect environmentally sensitive areas (DOE NEPA Guidelines, 55FR37178).

SECTION D DETERMINATION
CATEGORICAL EXCLUSION (CX) DETERMINATION - RFO/CX010-92
Site Characterization for OU 3, 4, 7 & 9

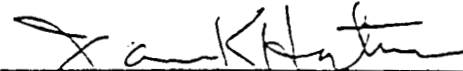
I have determined that the proposed action meets the requirements for the CX as defined in Section D of DOE NEPA Guidelines. Therefore, I approve the categorical exclusion of the proposed action from further NEPA review and documentation.

Date 5/14/92

Signature: 
Title: Terry A. Vaeth
Manager, Rocky Flats Office


Program Sponsor

Date May 12, 1992

Signature: 
Title: James K. Hartman
Manager, Environmental Management

I have reviewed this action and my finding is that the CX is the appropriate level of NEPA Documentation.

Date May 4, 1992

Signature: 
Title: Patricia M. Powell
NEPA Compliance Officer

ADS # 1101, 1251, 1255, 1258